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(74) Agent: VAN WESTENBRUGGE, Andries; Nederlandse Oktrooibureau, Scheveningseweg 82, P.O. Box 29720, NL-2502 LS The Hague (NL).

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(71) Applicants (*for all designated States except US*): WAGENINGEN UNIVERSITY [NL/NL]; P.O. Box 9101, NL-6700 HB Wageningen (NL). PAQUES B.V. [NL/NL]; P.O. Box 52, NL-8560 AB Balk (NL).

(72) Inventors; and

(75) Inventors/Applicants (*for US only*): STAMS, A., J., M. [NL/NL]; Gerdesstraat 8, NL-6701 AK Wageningen (NL). BUISMAN, Cees, Jan, Nico [NL/NL]; Stinsenwei 1, NL-8571 RII Harsch (NL). DIJKMAN, Henk [NL/NL]; Geeuwkade 8, NL-8651 AA IJlst (NL). DE VOS, Willem, M. [NL/NL]; Langhoven 50, NL-6721 SJ Bennekom (NL).

(54) Title: PROCESS FOR ANAEROBIC OXIDATION OF METHANE

(57) Abstract: Methane can be used as a source for producing hydrogen or hydrogen equivalents in a biological process using mesophilic or thermophilic bacteria of the order of the *Thermotogales*, e.g. *Thermotoga maritima*. Hydrogen can be produced as such, or as a reducing equivalent for the reduction of various compounds such as sulphur compounds. Especially, the methane oxidation can be used for anaerobically reducing sulphate to sulphide using methane as the predominant or sole electron donor, in coculture with sulphate-reducing micro-organisms.

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